CONTENTS

- ➤ 1 MAURICE V. WILKES—Computers Then and Now
 - 8 G. SALTON AND M. E. LESK—Computer Evaluation of Indexing and Text Processing
 - 37 NIKLAUS WIRTH—PL360, A Programming Language for the 360 Computers
 - 75 ROBERT E. ECHOLS AND LEON COOPER—The Solution of Integer Linear Programming Problems by Direct Search
 - 85 James R. Slagle and Philip Bursky—Experiments With a Multipurpose, Theorem-Proving Heuristic Program
 - 100 OTTO NEALL STRAND AND E. R. WESTWATER—Statistical Estimation of the Numerical Solution of a Fredholm Integral Equation of the First Kind
 - 115 H. DUBNER AND J. ABATE—Numerical Inversion of Laplace Transforms and the Finite Fourier Cosine Transform
 - 124 DONALD M. KAPLAN—Some Completeness Results in the Mathematical Theory of Computation
 - 135 ZAMIR BAVEL—Structure and Transition-Preserving Functions of Finite Automata
- **×** 159 ABRAHAM WAKSMAN—A Permutation Network
 - 165 J. SKLANSKY, M. FINKELSTEIN, AND E. C. RUSSELL—A Formalism for Program Translation
 - 176 P. A. GILMORE—Structuring of Parallel Algorithms
 - 193 B. KUBERT, J. SZABO, AND S. GIULIERI—The Perspective Representation of Functions of Two Variables
 - 205 STEPHEN P. MORSE—A Mathematical Model for the Analysis of Contour-Line Data
 - 221 A. ORDEN AND V. NALBANDIAN-A Bidirectional Simplex Algorithm
 - 236 DONALD W. LOVELAND-Mechanical Theorem-Proving by Model Elimination
- ★ 252 MARSHALL C. PEASE—An Adaptation of the Fast Fourier Transform for Parallel Processing
 - 265 FRANK J. ZELEZNIK-Quasi-Newton Methods for Nonlinear Equations
 - 272 GERALD L. MORRIS AND PATRICK L. ODELL—Common Solutions for n Matrix Equations With Applications
 - 275 OLIVER ABERTH—Analysis in the Computable Number Field
 - 300 MARCEL PAUL SCHÜTZENBERGER-A Remark on Acceptable Sets of Numbers
 - 304 RAYMOND T. YEH—Generalized Pair Algebra With Applications to Automata Theory
 - 317 J. E. HOPCROFT AND J. D. ULLMAN—Decidable and Undecidable Questions
 About Automata
 - 325 J. HARTMANIS—Computational Complexity of One-Tape Turing Machine Computations
- ★ 340 CORRIGENDUM [A. WAKSMAN, VOL. 15, NO. 1]
 - 341 E. G. COFFMAN, JR.—Analysis of Two Time-Sharing Algorithms Designed for Limited Swapping
 - 354 PAUL G. COMBA—A Procedure for Detecting Intersections of Three-Dimensional Objects

- 367 PETER B. ANDREWS-Resolution With Merging
- 382 J. HARTMANIS AND H. SHANK-On the Recognition of Primes by Automata
- 390 J. J. KOHFELD AND G. T. THOMPSON—A Modification of Nordsieck's Method Using an "Off-Step" Point
- 402 GERHARD ZIELKE-Inversion of Modified Symmetric Matrices
- 409 T. v. GRIFFITHS—The Unsolvability of the Equivalence Problem for Λ -Free Nondeterministic Generalized Machines
- 414 JOHN E. HOPCROFT AND JEFFREY D. ULLMAN—Relations Between Time and Tape Complexities
- 428 SEYMOUR GINSBURG AND MICHAEL A. HARRISON—One-Way Nondeterministic Real-Time List-Storage Languages
- 447 B. A. CHARTRES AND J. J. FLORENTIN—A Universal Syntax-Directed Top-Down Analyzer
- 464 P. M. LEWIS II AND R. E. STEARNS-Syntax-Directed Transduction
- 489 CORRIGENDUM [WIRTH, VOL. 15, NO. 1]
- 490 CONTRIBUTIONS TO THE JOURNAL OF THE ASSOCIATION FOR COMPUTING MA-CHINERY; ACM AUTHOR INSTRUCTIONS FOR MANUSCRIPT DOCUMENTATION UNIT; CATEGORIES OF THE COMPUTING SCIENCES
- 493 C. C. GOTLIEB AND S. KUMAR-Semantic Clustering of Index Terms
- 514 DONALD R. MORRISON—PATRICIA—Practical Algorithm To Retrieve Information Coded in Alphanumeric
- 535 THOMAS C. LOWE—The Influence of Data-Base Characteristics and Usage on Direct-Access File Organization
- 549 EDWARD G. COFFMAN AND LEONARD KLEINROCK—Feedback Queueing Models for Time-Shared Systems
- 577 JOSEPH ABATE, HARVEY DUBNER, AND SHELDON B. WEINBERG—Queueing Analysis of the IBM 2314 Disk Storage Facility
- 590 RAYMOND REITER—Scheduling Parallel Computations
- 600 U. MONTANAL.—A Method for Obtaining Skeletons Using a Quasi-Euclidean Distance
- 625 J. R. QUINLAN AND E. B. HUNT-A Formal Deductive Problem-Solving System
- 647 Alfred V. Aho—Indexed Grammars—An Extension of Context-Free Grammars
- 672 ARNOLD L. ROSENBERG—On the Independence of Real-Time Definability and Certain Structural Properties of Context-Free Languages
- 680 DENNIS F. CUDIA AND WILSON E. SINGLETARY—Degrees of Unsolvability in Formal Grammars
- 693 AMAR MUKHOPADHYAY—Representation of Events in the von Neumann Cellular Model
- 706 ABBAS I. ABDEL KARIM—A Theorem for the Stability of General Predictor-Corrector Methods for the Solution of Systems of Differential Equations
- 712 JAMES DYER—Generalized Multistep Methods in Satellite Orbit Computation
- 720 A CORRECTION CONCERNING RESOLUTION [ANDREWS, VOL. 15, NO. 3]

